

RESEARCH ARTICLE

# Effect of edible and non-edible oils on the growth and development of *Callosobruchus maculatus* infesting green gram (*Vigna radiata*)

■ SUBHASH KATARE<sup>1\*</sup>, ASHOK SHARMA<sup>2</sup> AND V.K. SHARMA<sup>3</sup>

<sup>1\*</sup>Krishi Vigyan Kendra, Jaora, RATLAM (M.P.) INDIA

<sup>2</sup>Chaithram College of Professional Studies, INDORE (M.P.) INDIA

<sup>3</sup>Department of Plant Molecular Biology, P.M.B.Gujarati College, INDORE (M.P.) INDIA

## ARTICLE INFO

**Received:** 20.01.2012

**Revised :** 05.04.2012

**Accepted :** 19.07.2012

## Key Words :

Edible and non-edible oils,  
*Callosobruchus maculatus*,  
*Vigna radiata*

\*Corresponding author:  
kvk.katara@gmail.com

## ABSTRACT

Effect of edible and non-edible oils of sesame, coconut, groundnut, soybean, mustard, mahua, castor, karanj, neem and linseed on *Callosobruchus maculatus* infesting green gram was investigated. The green gram seeds were treated with @ 2.5ml, 3.5ml, 4.5ml and 5.5ml per kg. seeds. All the oil treatments recorded significant effect in reducing the egg deposition (2.19 to 28.41 eggs) over control (70.69 eggs). There was no egg deposition on 120 and 150 days old treated seed of neem oil treatments. Similarly castor oil was most effective in which no adult emergence was recorded and found significantly superior to rest of the oil treatments except neem oil treatment.

**How to view point the article :** Katara, Subhash, Sharma, Ashok and Sharma, V.K. (2012). Effect of edible and non-edible oils on the growth and development of *Callosobruchus maculatus* infesting green gram (*Vigna radiata*). *Internat. J. Plant Protec.*, **5**(1): 241-244.

## INTRODUCTION

The pulse beetle, *Callosobruchus maculatus* (Fab.) is a major insect pest of green gram and other storage pulses causing substantial damage in the storage. The bruchids (*Callosobruchus* spp.) though attack these crops in field and are carried to store where they continue to damage the grain (Singh and Ahlawat, 2005). Fumigation is the most effective chemical control measure. In the recent years, it has been realized that the major emphasis should be given to vegetable oils used as grain protectants. Earlier it was proved that great losses caused by pulse beetle can be avoided if vegetable oils are smeared on the pulse (Mummigatti and Raghunathan, 1977; Sujatha and Punnaiah, 1985 and Parsai *et al.*, 1994; Rajpake *et al.*, 1998). Doharey *et al.* (1987) proved that higher concentration of coconut, groundnut, mustard, sesame, and taramira oils were more effective against bruchid attack under longer period of storage. The present paper is also an attempt in this regard.

## MATERIALS AND METHODS

Present investigation was conducted under laboratory conditions in the Department of Zoology, Holkar Science College, Indore (M.P.) in the year 2008 to 2009.

The homogenous culture of pulse beetle, *Callosobruchus maculatus* was maintained on green gram at 27.5°C ± 1°C in incubator on variety K-851 (as per procedure described by Strong *et al.* (1968) and key given by Raina, 1970). The seeds of green gram were treated with the different vegetable oils viz., sesame, coconut, groundnut, soybean, mustard, mahua, castor, karanj, neem and linseed oils @ 2.5, 3.5, 4.5 and 5.5 ml/kg. seed in bulk and kept in polythene bags for further experiment. One hundred seeds treated with each oil and untreated seeds were kept in petridishes at 60, 90, 120 and 150 days after treatment. Three pairs of pulse beetle were released in each petridish for 72 hours and then all the adults were removed after counting the dead and alive adults. The experiments were replicated three times. Number of eggs laid